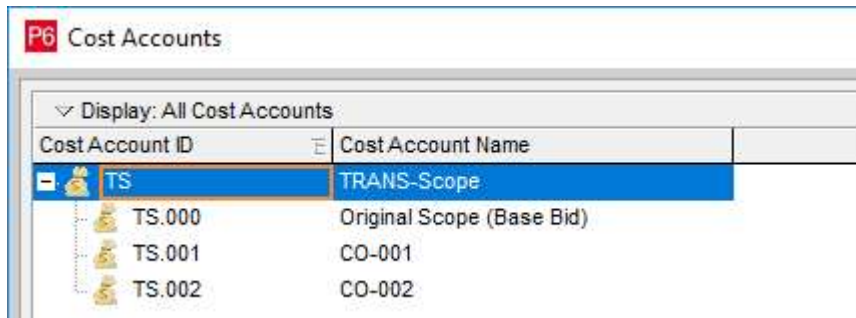


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Amendments to the Prosecution and Progress SP

- (1) **SP section 108.2(j)(1) & (8) – Change Order (Project Activity Code)**
A Change Order project activity code is not required.
- (2) **SP section 108.2(j)(1) & (8) – Change Order (Project Activity Code)**
A Change Order project activity code is not required. Cost Account shall be assigned in lieu of unique Resource IDs and Resource Codes.
- (3) **SP section 108.2(j)(1) & (8) – Change Order (Project Activity Code) and associated Resource Assignments on activities**
Assign the appropriate Cost Account to every resource assignment.
 - a) Create a Parent Cost Account named “TRANS-Scope”.
 - b) Assign Child Cost Account “000” to all original scope resources / assignments.
 - c) Assign Child Cost Accounts to each resource associated with Change Orders.



Cost Account ID	Cost Account Name
TS	TRANS-Scope
TS.000	Original Scope (Base Bid)
TS.001	CO-001
TS.002	CO-002

- (4) **SP section 108.2(j)(1) – Production Rate: User Defined Field**
In lieu of assigning a production rate for each construction installation activity, assign every Material Resource the associated “default units/time”. This method will populate all activities when material resources are assigned while reducing the amount of time for schedule development and increasing the accuracy for applying a standard (typical) productivity rate on each activity.

Structure

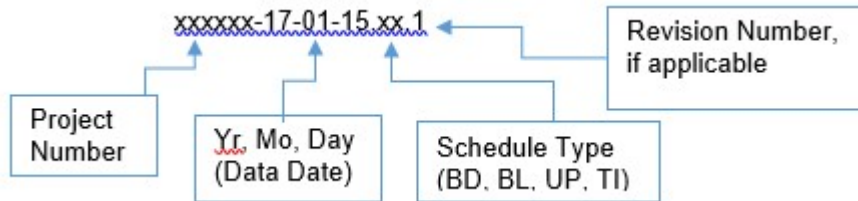
(5) **SP section 108.2(j)(1) - Project ID**

The following project ID structure shall be implemented on all projects:

- a) The first 6 characters shall be the project number followed by a dash.
- b) The next 2 characters shall be the current year followed by a dash.
- c) The next 2 characters shall be the current month (month of update period) followed by a dash.
- d) The next 2 characters shall be the current day (day update period) followed by a dot.
- e) The next 2 characters shall be the Schedule Type followed by a dot:
 - i) BD = Bid
 - ii) BL = Baseline
 - iii) UP = Update
 - iv) CO = Change Orders (Non-TIA)
 - v) TI = Time Impact
- f) If there is a revision required, the revision number will be sequential beginning with one (1) after a period to separate it from the month.

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- g) Incorporate the Project ID into the P6 .xer schedule backup (export) file name for submittal.

Example: P6 .xer file name (using the CAP/ArDOT file name convention):



(6) SP section 108.2(j)(1) – Project Name

The following naming structure shall be implemented on all projects:

- The first 6 characters shall be the project number followed by a space, a dash, and a space. (CA = Connecting Arkansas program)
- The Project Name shall be included next followed by a space, a dash, and a space.
- The Current Update period Month, Day, Year
- Schedule Type:
 - BD = Bid Schedule
 - BL = Baseline
 - UP = Update
 - CO = Change Order Fragnet
 - TI = Time Impact Analysis
- Revision Number, if applicable



(7) SP section 108.2(j)(1) – Activity ID

The following activity ID structure shall be incorporated into the each schedule activity.

- Characters 1-2 shall correspond to the MOT Stage.
- Character 1 is numeric and character 2 is alphabetic.

Examples (see full list in table below)

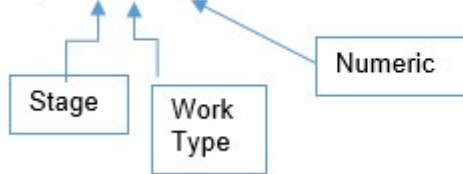
- 0X = Not Stage Specific
- 1X = Stage 1
- 1A = Stage 1A
- 1B = Stage 1B
- 2X = Stage 2

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- Characters 3-4 shall equate to the Work Type activity code:
 - Examples (see full list in table below)
 - AD = Administration
 - ER = Earthwork
 - AP = Asphalt (ACHM)
- Characters 5-8 shall be numeric, at the contractor's discretion

Example: 1AAP1215 = S1A ACHM Binder Course – Sta. 1234+45 - 1267+87



Values for Activity ID			
Characters 1 & 2 (Stage)		Characters 3 & 4 (Work Type)	
ID Value	Stage Name (WBS)	ID Value	Work Type Name
0X	Not Stage Specific	AD	Admin
1X	Stage 1	MS	Milestones
1A	Stage 1A	UT	Utilities / ROW
1B	Stage 1B	EC	Erosion Control (incl. clearing & grubbing, fencing)
2X	Stage 2	SD	Storm Drainage (incl. box & pipe culverts)
xx	Stage xx, etc.	TC	Traffic Control
		DM	DEMO / Removals
		ER	Earthwork
		AG	Aggregate
		AP	Asphalt (ACHM)
		CN	Concrete
		WL	Walls
		BR	Bridge
		GR	Guardrail / Signage / Pavement Markings / Permanent Fence / Landscape / Lights / misc.
		PL	Punchlist

(8) SP section 108.2(j)(1) – Activity Name

Each activity name shall contain the following items in the described format and sequence. No two activities shall have the same description.

- a) Stage number. (Examples: S1A, S1B, S2, etc.)
- b) Verb stating what type of work is being performed. (Examples: Install, Remove, Excavate, Place, Cut, Fill, Clear & Grub, Demo, Grout, Erect, Test, etc.)
- c) Noun stating what the verb is acting upon. (Examples: Bent, Box Culvert, Piling, concrete, ACHM Base Course, ACHM Surface Course, Column, Shaft, Access Tubes, etc.)
- d) Location of work. (Examples: Station 1234+45 - 1267+87, Cedar Creek Bridge, etc.)

Activity Name Examples:

- S1 Cut Earthwork – Sta. 1234+45 - 1267+87

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- S1A ACHM Binder Course – Sta. 1234+45 - 1267+87
- S1B Bent 5 - Pre Bore & Drive Piling 5 - 12' - (12"x53) - Cedar Creek Bridge
- S2 Grade Out - Single 4 x 6 - Pre-Cast Box Culvert – Sta. 611+36.13 - 38 LF – RT
- S1A Backfill Embankment - Sta. 683+00 to 704+00 Left (Shoulder Only)

(9) SP section 108.2(j)(1) – WBS

The contractor shall use the following four (4) levels of WBS as a minimum requirement.

1. Project *{P6 default level 1 WBS for each new project}*
 - 1.1 Admin
 - 1.2 Milestones
 - 1.2.1 Project Milestones
 - 1.2.2 Utility / ROW Milestones
 - 1.3 Change Orders
 - 1.4 Impacts
 - 1.5 Engineering
 - 1.5.1 Submittals
 - 1.5.2 Approvals
 - 1.6 Procurement
 - 1.6.1 Purchasing
 - 1.6.2 Fabrication
 - 1.6.3 Delivery
 - 1.7 Construction
 - 1.7.1 Stage 1A *(WBS Level 3 (Stage) – According to MOT Plan)*
 - 1.7.1.1 Station 10+00 - 16+54.68 - Temp Crossover – Stage 1A
 - 1.7.1.2 Station 505+25 - 527+11 - Temp Widening – Stage 1A
 - 1.7.2 Stage 1B
 - 1.7.2.1 Cedar Creek Bridge - A7135 - Station 480+71.92 - 483+89.08 - Stage 1B
 - 1.7.2.2 Box Culverts - Section 1 - BOJ - Station 645+00 - Stage 1B *(Section / Area Level 4 - Note the naming convention.)*

(10) SP section 108.2(j)(1) – Activity Codes

a) Work Type / Component (Global Activity Code)

The contractor must assign the appropriate work type activity code to each activity within the schedule. A Work Type Global Activity Code has been established in the Department P6 database that contains the following code values and names. The name of the Global Activity Code is "WORK TYPE (*)". Set Max Length for value character to two (2).

<u>Code Value</u>	<u>Description</u>
AD	Admin
MS	Milestones
UT	Utilities / ROW
EC	Erosion Control (incl. clearing & grubbing, fencing)
SD	Storm Drainage (incl. box & pipe culverts)
TC	Traffic Control
DM	DEMO / Removals
ER	Earthwork
AG	Aggregate
AP	Asphalt (ACHM)
CN	Concrete
WL	Walls
BR	Bridge
GR	Guardrail / Signage / Pavement Markings / Permanent Fence / Landscape
PL	Punchlist / Closeout

(NOTE: Submittal and Approval activities shall be assigned code values correlating to the

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type of work for which they are related.)

b) Responsibility / Contractor (Global Activity Code)

The contractor must assign the appropriate responsibility activity code to each activity within the schedule.

The Contractor must request addition of new subcontractors, not currently present in the code dictionary, to be added into the responsibility activity code dictionary. The department will attempt to add new contractors from the contact list included with the submitted preliminary and baseline schedule narratives.

A Responsibility Global Activity Code has been established in the Department P6 database that contains the following code values and names. The name of the Global Activity Code is "RESPONSIBILITY (*)" Set Max Length for value character to six (6).

NOTE: A list of Responsibility code values and names are attached to the end of this document. Contact the ArDOT / CAP Scheduler to request the most recent list and/or to add company values and names that are not on the list.

c) Station / Location (Project Activity Code) – The contractor shall develop a Project Level Activity Code to be assigned to all activities. The name of the Project Activity Code is "Station / Location". Set Max Length for value character to seven (7).

Examples:

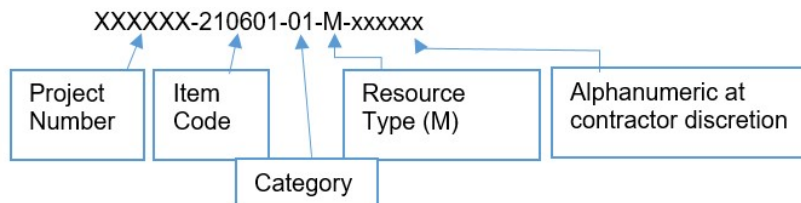
Code Value Description

ES	Entire Stage
EP	Entire Project
Sec1	Section 1 - BOJ - Sta 645+00
Sec2	Section 2 - Station 645+00 - 825+00
Det797	Detour 797+83 to 806+02
RML616	Right Main Lanes 616+41 to 640+00
BR07363	Bridge 07363 - Stage 1

2) Unspecified Activity Codes (Project Activity Code): The contractor may develop and use any additional project level activity codes deemed necessary to plan and manage the project in the most efficient manner.

(11) SP section 108.2(j)(2) & (8) – Material Resources & ID Structure

- 1) The first 6 characters shall be the project number followed by a dash.
- 2) The next 6 characters shall be the item code (schedule of values line item) followed by a dash. Add leading zero(s) to equal 6 characters if necessary.
- 3) The next 2 characters shall be the Category followed by a dash.
- 4) The next character shall be the resource type (M = Material) followed by a dash.
- 5) The next 6 characters shall be alphanumeric (at contractor's discretion)

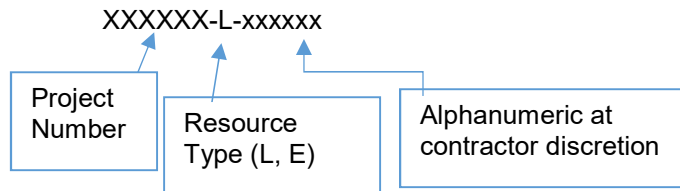


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(12) SP section 108.2(j)(2) & (8) – Labor & Equipment Resources & ID Structure

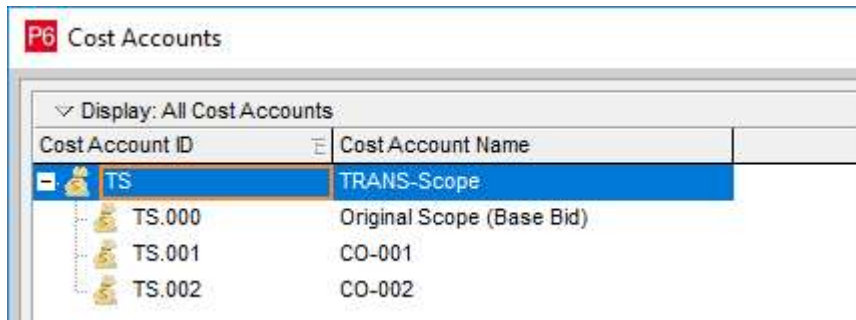
- 1) The first 6 characters shall be the project number followed by a dash.
- 2) The next character shall be the resource type (L = Labor, E = Equipment) followed by a dash.
- 3) The next 6 characters shall be alphanumeric (at contractor's discretion)



(13) SP section 108.2(j)(1), (2) & (8) – Resource Cost Accounts & Units of Measure

1) Cost Accounts:

- a) Assign the appropriate Cost Account to every resource assignment.
- b) Create a Parent Cost Account ID of "TS" named "TRANS-Scope".
- c) Assign Child Cost Account "000" to all original scope resources / assignments.
- d) Assign Child Cost Accounts to each resource associated with Change Orders.



2) Units of Measure:

The Material Unit of Measure shall be the standard ArDOT abbreviations (values).

ArDOT Units of Measure	
Values	Description
ACRE	Acres
BAG	Bags
BALE	Bales
CUFT	Cubic Foot
CUIN	Cubic Inch
CUYD	Cubic Yard
DAY	Days
EACH	Each
GAL	Gallons
HOUR	Hours
L.S.	Lot Size (lump sum)
LB	Pounds

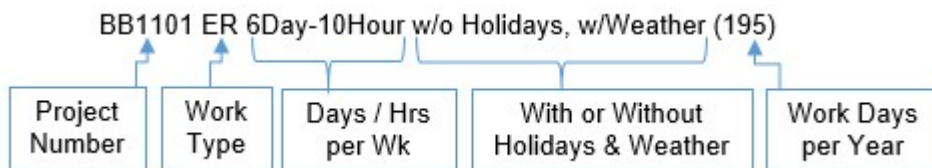
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LF	Linear Feet
MGAL	Metric Gallons
MNTH	Months
SQFT	Square Feet
SQYD	Square Yards
STA	Stations
TON	Tons
WEEK	Weeks

(14) SP section 108.02(j)(1), (g)(2), (g)(4) - Calendars:

- 1) The following Calendar Name structure shall be used on all Project Calendars
 - a) The first 6 characters shall be the project number followed by a blank space.
 - b) The characters 7 & 8 shall be the Work Type value followed by a blank space.
 - c) The next characters shall be the days per week and hours per day "xDay-xxHour" followed by a blank space.
 - d) Specify if the calendar includes or excludes Holidays. For calendars including holidays, use "w/ Holidays". For calendars without holidays, use "w/o holidays. Follow this with a comma and a blank space.
 - e) Specify if the calendar includes or excludes Weather (non-work days). For calendars including weather days, use "w/ Weather". For calendars without weather, use "w/o Weather". Follow this with a blank space.
 - f) In parentheses, show total number of Workdays planned for each calendar year per calendar.



- 2) Create a Shared Resource calendar for all resource assignments. Please make it a 7-day workweek calendar to prevent the resource calendars from overriding any of the activity calendars. Calendar name should be "Project Number" followed by "Resource Calendar 7 Day". (Ex: BB1101 Resource Calendar 7 Day)
- 3) All activity calendars must be Project Calendars with no inheritance to Global Calendars.
- 4) All start and finish times for each calendar must match for every workday within the calendars and between all calendars.
- 5) All calendars must contain Holidays, Sundays, and weather (non-work) days extended fifty percent (50%) of the contract duration beyond the contract completion date. The monthly number of non-work days should be the same for all years.
- 6) Non-work (weather) days shall be aligned in each calendar within a schedule. A varying number of non-work days based on work type is allowed, but each calendar's planned non-work days should align across all calendars for equivalent anticipated weather.
 - a) Example: If February 2nd is a planned weather day on an Asphalt calendar, February 2nd should align as a weather day on Concrete, Earthwork, etc. calendars if applicable.
 - b) NOTE: Weather days that are sequential days across multiple calendars for equivalent planned non-work days **is not allowed**.
 Example: A single weather day planned within the same week across multiple calendars with Asphalt on Monday, Earthwork on Tuesday, Concrete on Wednesday, etc. This incorrectly blocks 3-days of weather within a week for a single anticipate weather day.

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Technical / Settings

P6 Settings Clarifications - The following P6 settings must be used in order for all projects to function and calculate properly within the ArDOT (CAP) Enterprise environment.

Administration Defaults:

Earned Value

Activity Percent Complete	Check
ETC = Remaining Cost for activity	Check
At Completion with Current Dates	Check

User Preferences:

Resource	Opened Projects Only	Check
Analysis	Remaining Early Dates	Check
	Calculate Primary resources' limit	Check
Calculations	Preserve the units	Check
	When assigning resource, Ask me to select	Check
	When Resource & Role share, Ask me to select	Check

Schedule Options:

General	Use Expected Finish	Check
	Retained Logic	Check
	Early Start	Check
	Longest Path	Check
	Each Project	Check
	Compute TF as FF = LF - EF	Check
	Calendar for Rel lag is Predecessor calendar	Check
Advanced	Calculate Multiple Float Paths (# Paths = 1000)	Check

Project Level Defaults:

Defaults	Duration Type = Fixed Duration & Units	
	Percent Complete Type = Duration	
	Activity Type = Task Dependent	
	Calendar = Project Calendar	
	Must Finish By = 'Final Completion' date	
Resources	Default Rate Type = 'Price / Unit'	Uncheck
	Drive activity dates by default	Check
	Resources can be assigned to same activity more than once	
Settings	Summarize to WBS Level = 2	
	Detail activity resource	Check
	Project Baseline	Check
	Longest Path	Check
Calculations	Activity percent complete based on steps	Uncheck
	Link Budget and At Completion for unstarted activities	Check
	Reset Remaining Duration and Units to Original	Check
	Subtract Actual from At Completion	Check
	Recalculate Actual Units and Cost when duration % complete changes	Check
	Update units when costs change on a resource assignment	Uncheck
	Link actual to date and actual this period units and cost	Check

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Resource Defaults:

Material Details	Auto Compute Actuals (Required)	Uncheck
	Calculate costs from units (Required)	Check
Equipment Details	Auto Compute Actuals (<i>Preferred</i>)	Check
	Calculate costs from units (<i>Preferred</i>)	Check
Labor Details	Auto Compute Actuals (<i>Preferred</i>)	Check
	Calculate costs from units (<i>Preferred</i>)	Check

Resource Assignments:

Material Assignments	Drive Activity Dates (all assignments Required)	Uncheck
	Auto Compute Actuals (all assignments Required)	Uncheck
	Calculate costs from units (all assignments Required)	Check
Equipment Assignments	Primary Resource (all assignments Required)	Uncheck
	Drive Activity Dates (all assignments Required)	Uncheck
	Auto Compute Actuals (<i>all assignments Preferred</i>)	Check
Labor Assignments	Calculate costs from units (<i>all assignments Preferred</i>)	Check
	Primary Resource (<i>all assignments Preferred</i>)	Uncheck
	Drive Activity Dates (all assignments Required)	Uncheck
	Auto Compute Actuals (<i>all assignments Preferred</i>)	Check
	Calculate costs from units (<i>all assignments Preferred</i>)	Check
	Primary Resource (<i>all assignments Preferred</i>)	Check

Clarifications

(15) SP section 108.02(g)(2) - Bid Schedule

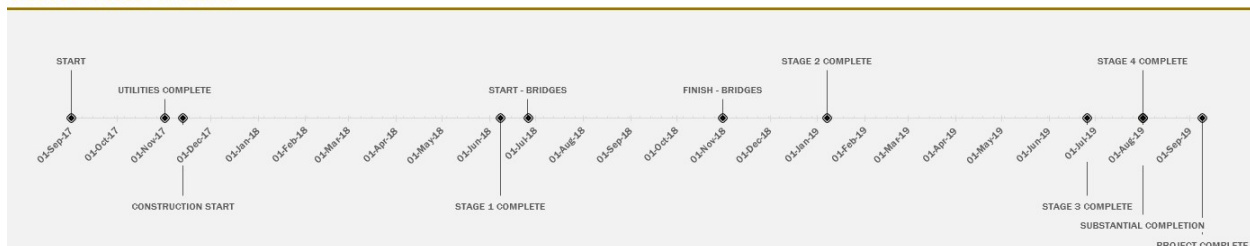
- (1) The SP states “High-level activities summarized by the Work Type Code as set forth in the “Activity Codes / Work Type” section of the “Schedule Structure” document located at [arkansashighways.com/Contractor Information/Construction Contractors/General Information/Structure of Project Schedule](http://arkansashighways.com/Contractor%20Information/Construction%20Contractors/General%20Information/Structure%20of%20Project%20Schedule) on the AHTD website shall be represented in the schedule for each stage.”

NOTE: The intent is to have at least one task for each Work Type activity within each Stage (according to the MOT plans) that will represent the entire project scope in a logical CPM schedule.

The schedule is not expected to have complete detailed activities summarized as a function of P6 to the Work Type code level.

- (2) Example of the bid schedule timeline required for the bid narrative is shown below and located at [arkansashighways.com/Contractor Information/Construction Contractors/General Information/Structure of Project Schedule](http://arkansashighways.com/Contractor%20Information/Construction%20Contractors/General%20Information/Structure%20of%20Project%20Schedule) on the AHTD website. It is an Excel file named “2017-11-20_XXxxxx_BidSchedTimeline_Example.xlsx”.

CAXXXX PROJECT TIMELINE



(16) SP section 108.2(j)(8) – Change Order Fragnets for Directed Change Orders

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Change Order fragnets for Directed Change Orders must be submitted within five (5) days of receiving notice. Potential time extensions based on change orders will be analyzed based on the most recent approved schedule, impact to the longest path, and subsequent movement of the current project completion date in accordance with the Evaluation of Delays and Calculation of Time Extensions section of this special provision. Failure to submit a fragnet with the change order forfeits any recovery for an associated recoverable project delay at any future date.

- (17) **Duration Type:** The Duration Type for all activities must be set to "Fixed Durations and Fixed Units".
- (18) **Primary Resource:** Since P6 does not allow a Material resource to be the Primary resource, use the Labor resource as Primary.
- (19) **SP section 108.2(j)(General) – Progress Updates**
 - 1) Remaining Durations - When performing progress updates, the Remaining Durations should be updated (progressed) on in-progress activities, reflecting the number of days required to complete the work.
 - NOTE:** Do not update the duration percent complete.
 - 2) Percent Complete - When performing progress updates, the physical percent complete should be used, **not** the duration percent complete. The physical percent complete should be close, if not exactly, to what the primary material resource percent complete is.

Best Practices

(20) Steps for Schedule Development:

The following basic steps will help ensure there are no partial days, resources are spread properly, start/finish dates, and TF are correct. Cleaning up these items after the fact can be time consuming.

- 1) Make sure all settings are correct.
- 2) Create all calendars
 - a) Verify "Hours per time period" for each calendar
 - b) Verify the daily Start and Finish times are the same for all calendars
 - c) Verify inclusion of holidays and weather days for all calendars
- 3) Create activities, resources, logic, and assign calendars & resources.

Global Responsibility Code: "TRANS-Responsibility"

As-of Feb 05, 2019

Code Value	Description
AEP	AEP
AllSer	All Service Electric
AmerCS	American Contracting
APACCn	Apac Central
ARTri	AR Trison
ARDOT	Arkansas Department of Transportation
ArSign	Arkansas Sign & Barricade
AshGro	Ash Grove Cement Company
AttArk	AT&T Arkansas
AttInc	AT&T Inc.
ATLAS	Atlas Asphalt Inc
JV	Atlas-Delta Joint Venture
Badger	Badger Daylighting Corp.

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BarkBac	Barker Backhoe & Dozer
BCMain	BC Main Construction
BevCon	Berry Concrete Construction
BerCon	Berry Concrete Construction
BIHill	Black Hills
BobKen	Bobby Kennedy Construction
CapCCI	Capital Concrete Cutting Inc.
CPC	Capital Paving and Construction LLC
CenL	Century Link
ChesBrC	Chester Bross Construction
CtyBen	City of Bentonville
CtyRog	City of Rogers
ValSpr	City of Valley Springs
Coast	Coastal Highway & Erosion
CMMC	Const. Manag. & Maint. Company
ConSSC	Contractor's Specialty Service Company
Cox	Cox
Cranfo	Cranford Construction Company
CreDes	Creative Design Concepts
Crisp	Crisp Contractors
CrouCo	Crouse Construction
CulvPI	Culverts Plus, Inc.
CustCE	Custom Curbing & Edging
DD	D&D Paving
DJCon	D&J Construction
Darrag	Darragh
Delta	Delta Asphalt
DiaSur	Diamond Surface
DKB	DKB Contractors LLC
DumCon	Dumey Construction
Entrgy	Entergy Arkansas
EnvSEI	Envirotrac Safety & Erosion Inc.
EvCon	Evatt Construction Company
Ewing	Ewing Signal Construction, LLC
ExpCon	Explosive Contractors
FannCC	Fanning Construction Company
FBL	FBL & Associates
ForGn	Forsgren, Inc
Forter	Forterra Pipe & Precast, LLC
FouTes	Foundation Testing & Consulting

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GarACr	Gary A Crain
Gerdan	Gerdan Slipforming, Inc.
Gerdau	Gerdau Dallas Reinforcing Steel
GonReb	Gonzalez Rebar, LLC
GrnMtn	Granite Mountain Quarries
GTS	GTS Inc
HWTCo	H.W. Tucker Company
HanGeo	Hanes Geo Components
HarrCM	Harris Construction Management
HayBak	Hayward Baker
HighGr	Highway Graphics
JBj	J B James Construction
JacoCo	Jacor
JetAsp	Jet Asphalt & Rock Co
JohnCo	Johnsville Company
KWGCCES	K West Group Civil Constr & Env Services
Kiewit	Kiewit
KosCon	Koss Construction
Lambrt	Lambert Construction
LasBro	LASBRO
LouisCo	Louis Company
MTPC	M & T Paving & Construction Co., Inc.
ManRoa	Manhattan Road & Bridge
MarCon	Marshall Construction
McGeor	McGeorge Contracting
MehCon	Mehaffy Construction
Mobico	Mobicon Crushing & Recycling
Mobley	Mobley Contractors
Nabhol	Nabholz Construction Corporation
ObrEng	Obryan Engineering Inc
OlyPai	Olympus Painting
PBXCor	PBX Corporation
Peter	Peterson Concrete Tank Co
PinBlf	Pine Bluff Sand & Gravel
PipDrC	Pipeline and Drainage Consultants
QltyTr	Quality Trucking of Little Rock, LLC
RamCnt	Ram Construction Services
RedConG	Redstone Construction Group
Ritter	Ritter Communication
RMI_WW	RMI Worldwide, LLC

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RobCon	Robertson Contractors
Scur	Scurlock Industries
SevVal	Seven Valleys Concrete
Sorrel	Sorrel-Smith Engineering Consultants, LLC
SoGR	Southern Guard Rail
Splclr	Special Clearing - SUB
StuBr	Stupp Bridge
SupTraf	Superior Traffic Control
SurPrp	Surface Prep Tech
SyES	Synergy Earth Systems
Terrac	Terracon (Concrete Testing)
TexopC	Texop Construction
ThoCtg	Thomas Industrial Coatings
TimStr	Time Striping Inc.
TotIEC	Total Erosion Control
TrafMar	Traf-Mark Ind.
TL	TRAFFIC & LIGHTING SYSTEMS
Tramar	Tramar
TrStGS	Tri-State Guardrail & Sign
WevBal	Weaver-Bailey Contractors
Webbr	Webber LLC.
WRM	White River Materials
Wind	Windstream & City of Bentonville